

Digital Marketing Adaptation and Consumer Engagement in ASEAN: A Systematic Review of Pathways to Sustainable Economic Development

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Abstract. The rapid expansion of digitalization across Southeast Asia has reshaped how firms compete, engage consumers and contribute to national economic development. Digital marketing adaptation (DMA) has emerged as a strategic capability that enhances market visibility, customer reach and business resilience within platform-mediated markets, while consumer engagement (CE) operates as a behavioral mechanism linking digital initiatives to market outcomes. However, despite growing interest in digital transformation and sustainability agendas across the region, scholarly knowledge on how DMA and CE contribute to sustainable economic development (SED) remains fragmented. To address this gap, this study conducts a systematic literature review (SLR) guided by PRISMA 2020 to synthesize empirical and conceptual evidence from 22 peer-reviewed studies published between 2020 and 2025 within Southeast Asian contexts, with particular attention to Malaysia. The findings indicate that DMA enhances SME competitiveness, innovation capacity and digital participation, while CE strengthens consumer-based behavioral responses associated with sustainability and value co-creation. Drawing upon the Stimulus–Organism–Response (SOR) framework and Service-Dominant Logic (SDL), the review highlights CE as a pathway through which DMA may contribute to SED by supporting employment, entrepreneurship, responsible consumption and inclusive digital participation. The review identifies several gaps, including limited theoretical integration, insufficient measurement of sustainability outcomes and limited Malaysian empirical evidence linking DMA–CE–SED. The study concludes by outlining limitations and proposing a future research agenda to support theory building and policy relevance in emerging digital economies.

Keywords: Digital marketing adaptation, consumer behaviour, consumer engagement, sustainable economic development, Southeast Asia; Malaysia, systematic literature review, PRISMA.

1. Introduction

The rise of digitalization has transformed how firms across Southeast Asia compete, innovate and sustain economic participation within increasingly platform-mediated markets. Emerging economies such as Malaysia, Indonesia, Thailand and Vietnam have experienced accelerated digital uptake driven by expanding mobile penetration, social platform usage and national digital economy agendas, particularly in the aftermath of the COVID period (OECD, 2023; UNCTAD, 2021). In Malaysia, digital platforms and digital commerce have become essential enablers for SME growth, employment and economic contribution (MDEC, 2021). Within this context, digital marketing has evolved beyond promotional communication into a strategic capability that supports market visibility, consumer reach and business performance in digital ecosystems (Dwivedi et al., 2022).

Digital marketing adaptation (DMA) refers to the process by which firms adopt, modify and integrate digital tools, platforms and data-driven capabilities to support customer interaction and value delivery (Kumar et al., 2021; Verhoef et al., 2021). DMA allows firms to develop social media marketing competencies, digital content strategies, online customer interfaces and informed analytics decision making, enabling them to navigate rapidly changing market structures and consumer behaviors. Empirical research in emerging Asian contexts has reported that DMA enhances SME competitiveness, customer acquisition and business resilience by expanding digital participation and reducing market frictions (Kumar et al., 2022; Chatterjee et al., 2021). These developments underscore the role of DMA as a strategic driver within emerging digital economies.

Consumer engagement (CE) has concurrently emerged as a behavioral mechanism linking digital marketing initiatives to consumer responses and market outcomes. CE encompasses cognitive, emotional and behavioral forms of consumer participation across digital touchpoints, including consumption, sharing, co-creation and content interaction (Brodie et al., 2011; Hollebeek et al., 2019). Research in Southeast Asian markets has shown that CE mediates the relationship between social media marketing strategies and behavioral outcomes such as purchase intention, loyalty and advocacy (Islam et al., 2018; Harrigan et al., 2018). In addition, CE influences sustainability-oriented behavioral responses including environmentally motivated consumption, trust in ethical brands and willingness to adopt sustainable products (Nekmahmud et al., 2022; Zafar et al., 2021). Chan et al. (2024) further demonstrated that consumers positively perceived influencer reputation within a Malaysian cosmetics context, with expert credibility strengthening CE and subsequent brand-related responses. These findings indicate that CE is shaped not only by technological and marketing stimuli but also by social and relational mechanisms that operate within digital platforms.

These trends align with an emerging body of scholarship that examines how digital marketing practices contribute not only to competitive advantage but also to social and economic well-being in developing markets. This body of work suggests that ethical communication, digital empowerment and transparent information practices can enhance consumer satisfaction, subjective well-being and long-term engagement outcomes. For Southeast Asian economies in which SMEs serve as key economic pillars, integrating sustainability considerations into digital marketing strategies aligns with Sustainable Development Goal (SDG) 8 relating to decent work and economic growth, as well as SDG 9 and SDG 12 relating to innovation and responsible consumption (United Nations, 2015).

However, despite the increasing importance of digital transformation and sustainability discourses in Southeast Asia, scholarship in this domain remains fragmented. First, studies on digital marketing adoption frequently examine technology usage, platform strategies or consumer purchase intention in isolation, without linking these processes to economic development or sustainability-oriented outcomes (Zainuddin, 2023; Huslan & Hassim, 2024). Second, although CE has been established within marketing and consumer behavior literature, its mediating role in connecting DMA to broader socio-economic and sustainability outcomes remains underexplored in Asian contexts. Third, existing systematic reviews on sustainable marketing focus largely on conceptual and global developments

(Bashar et al., 2025; Wijaya, 2025), with minimal synthesis of empirical evidence from Southeast Asian economies where digital transformation is particularly pronounced.

To address these gaps, this study conducts a systematic literature review (SLR) that examines DMA, CE and their potential contributions to sustainable economic development in Southeast Asian markets, with focused attention on Malaysia. Guided by the Stimulus Organism Response (SOR) and Service Dominant Logic (SDL) theoretical frameworks, this review synthesizes empirical and conceptual evidence, identifies unresolved theoretical and methodological gaps, and proposes research directions relevant to the digitalization of Asian economies.

2. Theoretical Foundation

Digital marketing research in emerging Southeast Asian markets has increasingly drawn on behavioral and value creation theories to explain how digital marketing strategies influence consumer responses and development outcomes. Two theoretical foundations are particularly relevant for examining DMA, CE and sustainable economic development (SED), namely the Stimulus Organism Response (SOR) framework and the Service Dominant Logic (SDL) perspective. These theories offer complementary explanations for how digital stimuli shape engagement and how engagement processes contribute to value creation that may support broader socio-economic and sustainability objectives.

2.1. Stimulus Organism Response (SOR) Framework

The SOR framework, introduced by Mehrabian and Russell (1974), explains how external stimuli influences internal psychological processes which in turn shape behavioral responses. In digital marketing contexts, marketing content, user interface design, interactivity and platform features function as external stimuli that affect consumer cognition, emotion and digital experience (the organism component). The response component includes behavioral actions such as purchase intention, engagement, loyalty and content sharing. The SOR model has been widely utilized in digital consumption research due to its capacity to explain complex psychological and behavioral mechanisms that arise in digital environments (Wells et al., 2011).

Within the scope of this review, DMA can be conceptualized as the stimulus that shapes consumer perception and interaction with digital content, while CE represents the organism through which consumers cognitively and emotionally process digital stimuli. Empirical research in Asian markets demonstrates that CE mediates the influence of digital marketing strategies on purchase intention and sustainability-oriented behaviors (Shien et al., 2023; Nekmahmud et al., 2022). The response stage may therefore include not only transactional outcomes but also sustainability-related behaviors such as environmentally motivated purchases, trust in ethical brands and support for responsible enterprises (Zafar et al., 2021). Through this mechanism, SOR provides an analytical structure for linking DMA to CE and subsequently to SED.

2.2. Service Dominant Logic (SDL)

The SDL perspective conceptualizes value as co-created through interactions between firms and consumers rather than being embedded solely in products or services (Vargo & Lusch, 2004). From an SDL viewpoint, digital marketing platforms serve as resource integration mechanisms that enable consumers to contribute to value creation through feedback, participation, content generation and advocacy. CE is central to SDL because engagement reflects the interactive process through which consumers participate in value co-creation. In developing Asian markets, where SMEs are significant contributors to employment and economic participation, digital platforms enable firms to integrate consumer information and resources into their strategic processes, thereby enhancing competitive and developmental outcomes.

SDL complements SOR by shifting the analytical focus from individual behavioral responses to broader value creation and co-creation processes that may contribute to SED. Research on sustainable digital marketing suggests that ethical and empowerment-oriented strategies can enhance CE, satisfaction and subjective well-being among consumers in developing markets (Al Amin et al., 2025). These outcomes align with dimensions of socio-economic well-being that contribute to SDG 8 and SDG 10, indicating that value co-creation driven by CE may function as a mechanism through which DMA contributes to broader sustainability outcomes.

2.3. Relevance to Southeast Asian and Malaysian Contexts

The application of SOR and SDL perspectives is particularly relevant to Southeast Asian markets due to the region's high social media penetration, platform-mediated commerce and influencer-driven consumption. Evidence from Malaysia indicates that consumer perceptions of influencer credibility strengthen CE and buyer behavior in digital contexts (Chan et al., 2024), reinforcing theoretical assumptions related to stimuli and value co-creation. In addition, studies in emerging Asian economies have shown that consumers respond positively to sustainability-oriented and socially meaningful marketing practices, which reflect both SOR (behavioral response) and SDL (value co-creation) mechanisms (Nekmahmud et al., 2022; Bashar et al., 2025). These theoretical alignments highlight the relevance of DMA–CE–SED relationships for understanding digital transformation processes in Southeast Asia.

3. Methodology

This systematic literature review adopts the Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA 2020) guidelines published by Page et al. (2021). The SLR methodology comprises four primary stages, namely identification, screening, eligibility assessment and inclusion. The PRISMA framework was selected due to its structured and transparent procedures for managing academic literature, particularly in interdisciplinary domains that draw from marketing, digital economy and sustainability scholarship.

3.1. Eligibility Criteria

Eligibility criteria were defined using the Population, Concept and Context (PCC) framework. The population included consumers, firms or market actors engaged in digital marketing activities. The conceptual criteria required studies to examine digital marketing adaptation (DMA), consumer engagement (CE) and sustainability related outcomes including SME competitiveness, consumer well being, green purchase intention or economic development. The contextual criteria required studies to be situated within Asian countries. Only English language peer reviewed journal articles published between January 2020 and December 2025 were included. Exclusion criteria eliminated book chapters, theses, conference papers, editorial commentaries and non-peer reviewed materials. Studies with unverifiable DOIs, insufficient methodological detail or publication in predatory outlets were excluded to ensure quality and academic integrity.

3.2. Information Sources

Electronic searches were conducted in Scopus, Web of Science, ScienceDirect, Emerald Insight, Taylor and Francis Online and SpringerLink. Supplementary searches were performed using Google Scholar, ProQuest and Business Source Complete to minimize publication bias and to identify additional regional studies not indexed in the primary databases. Backward and forward citation chasing was also performed to identify further relevant studies through reference lists and citation networks of included articles.

3.3. Search Strategy

The search strategy was developed iteratively using Boolean operators and multiple keyword combinations related to DMA, CE and sustainability outcomes. The final search string was applied across all primary databases as follows:

("digital marketing" OR "digital marketing adaptation" OR "digital marketing transformation" OR "social media marketing" OR "digital marketing capability" OR "digital marketing agility")

AND

("consumer engagement" OR "customer engagement" OR "customer participation" OR "consumer experience" OR "customer experience")

AND

("sustainability" OR "sustainable consumption" OR "economic development" OR "SME competitiveness" OR "consumer well being" OR "sustainable behavior" OR "green purchase intention")

No geographical terms were included in the search string. The regional filter for Asian and Malaysian studies was applied during the screening stage to ensure comprehensive retrieval and methodological rigor in accordance with current SLR standards.

3.4. Screening and Study Selection

Database searches yielded 684 records, and 32 additional records were identified through supplementary citation searching. After the removal of 147 duplicate entries, 537 records remained for title and abstract screening. At this stage, 475 records were excluded for not examining DMA, CE or sustainability related outcomes or for being outside the marketing and business domain. Full texts were retrieved for 62 studies and assessed for eligibility. An additional 32 full texts were assessed for eligibility through citation chasing. Of the combined 94 full text articles assessed, 73 were excluded for the following reasons: not situated in an ASEAN context ($n = 24$), did not include DMA or CE constructs ($n = 13$), not empirical or conceptual research ($n = 7$), insufficient methodological detail or unverifiable DOI ($n = 7$), and publication in predatory or non-indexed outlets ($n = 3$). A further nine studies identified through citation chasing were excluded for being outside the ASEAN context ($n = 8$), not DMA or CE relevant ($n = 9$), opinion or commentary in nature ($n = 7$), or predatory or unverifiable DOI ($n = 3$). A total of 21 studies met the final inclusion criteria. The PRISMA 2020 flow diagram in Figure 1 summarizes the identification, screening and inclusion process.

3.5. Data Extraction

A structured extraction matrix captured the following information from included studies: author, year, country, sector or context, research objectives, theoretical frameworks, methodological design, constructs, outcomes and key findings. Extracted data were analyzed using qualitative thematic analysis.

3.6. Quality Assessment

The Mixed Methods Appraisal Tool (MMAT) was used to assess the methodological quality of empirical studies. The MMAT evaluates clarity of research questions, appropriateness of data sources, methodological alignment and consistency of interpretation. Conceptual studies were assessed using narrative criteria relating to coherence, clarity and contribution to theory. No study was excluded on the basis of quality assessment.

3.7. Types of Studies Included

The final sample consisted of both empirical and conceptual studies. Empirical studies included quantitative survey-based research, qualitative interview and case study designs and mixed methods designs that combined qualitative and quantitative data. Conceptual studies were included when they developed or synthesized theoretical perspectives on digital marketing, consumer engagement or sustainable digital marketing. This approach is consistent with current practice in systematic literature reviews in marketing and sustainability, where both empirical evidence and conceptual development

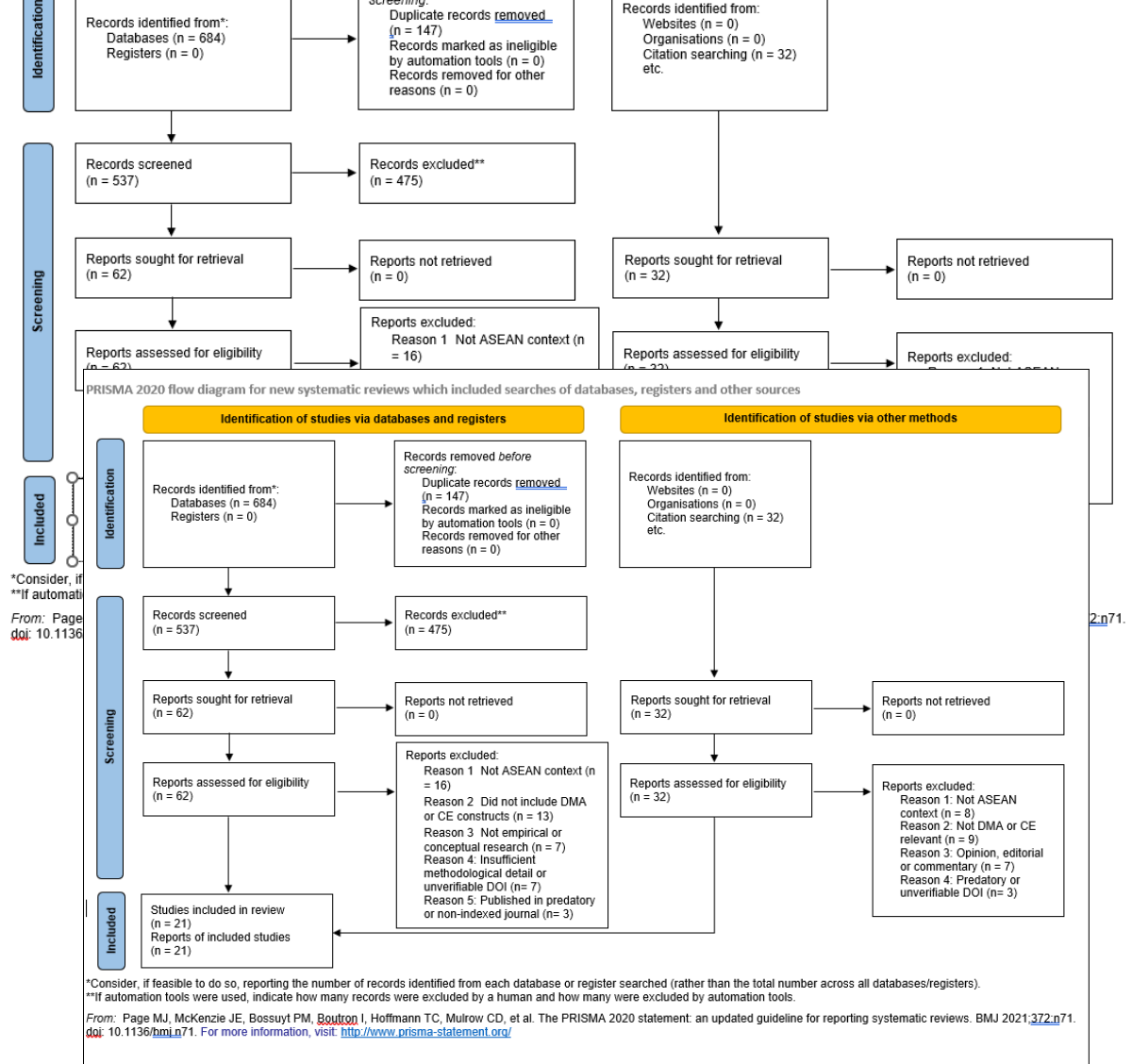


Fig. 1: PRISMA flow diagram.

4. Results

4.1. Characteristics of Included Studies

Table 1: Characteristics of Included Studies.

Title	Authors	Year	Journal	Main Findings	Study Type	Region
Advancing Sustainability Through Digital Transformation: Empirical Evidence from Southeast Asian Listed Companies	Leeraphong, A., Chuairuang, S., & Sukrat, S.	2025	Business Strategy & Development	Digital adoption and transformation significantly enhance corporate sustainability performance in Malaysia, Thailand, and Indonesia.	Empirical	Southeast Asia (Malaysia, Thailand, Indonesia)
Unveiling the Impact of the Digital Economy on Future Employment: A Comparison Study among Selected Southeast Asian Countries	Kunasegaran, M., Xing, Y., & Kunjiapu, S.	2024	Int. J. of Academic Research in Business and Social Sciences	Digital economy strategies reshape employment, innovation, and inclusive growth in Malaysia and neighbouring SEA countries.	Conceptual/ Review	Southeast Asia

E-Hailing Services: Antitrust Implications of Uber and Grab's Merger in Southeast Asia	Rahman, N. B. A., Khan, M. B. A., Azmi, I., & Zakaria, M.	2020	IIUM Law Journal	Merger impacts competition and consumer engagement in digital platforms, with policy implications for Malaysia.	Conceptual	Southeast Asia (Malaysia)
Multiplier Transformation of E-commerce to S-commerce in Emerging Economy	Asanprakit, S., & Kraiwanit, T.	2024	R-Economy	Social commerce drives economic growth and digital consumer engagement across Southeast Asia.	Empirical	Southeast Asia
Governing Complex Disasters in Southeast Asia: A Focus on COVID-19 Management in Malaysia	Zreik, M.	2024	Southeast Asia: A Multidisciplinary Journal	Analyzes Malaysia's digital governance adaptation and sustainability strategies during COVID-19.	Conceptual	Malaysia
SME and ASEAN's Path to Sustainability: Green Management Practices in the Context of SDG	Toan, N. D., Duc, P. M., & Anh, D. N.	2025	Journal of Lifestyle and SDGs Review	SME green management practices enhance triple-bottom-line sustainability in Malaysia, Thailand, and Vietnam.	Review	Southeast Asia
State of Social Marketing in Malaysia: Challenges and Reflections of a Multicultural Nation	Ong, D.	2025	Social Marketing Quarterly	Highlights Malaysia's need for deeper consumer engagement in sustainability-focused social marketing.	Conceptual	Malaysia
The Productivity Growth of Malaysian Microfinance Institutions	Abdamia, N., Fahmy-Abdullah, M., & Wei Sieng, L.	2025	Asian Economic and Financial Review	Technological and digital adaptation improves Malaysian MFI productivity and economic sustainability.	Empirical	Malaysia
Digital Economy: A Comparative Study in ASEAN	Tran, L. Q. T., Phan, D. T., & Nguyen, M. T.	2022	Theory, Methodology, Practice	Compares ASEAN digital readiness, showing Malaysia and Singapore lead in digital sustainability initiatives.	Comparative Review	ASEAN
Supporting post-COVID-19 Economic Recovery in Southeast Asia	Seng, B., Swee, C. W., Mangal, M., Ng, T. H., & Zara, D.	2021	ADB Briefs	Examines structural reforms for digital recovery and sustainable economic growth post-pandemic.	Conceptual	Southeast Asia
A Comparative Study on the International Competitiveness of Digital Trade between China and Malaysia	Hu, S.	2024	Journal of Digitainability, Realism & Mastery (DREAM)	Malaysia's digital trade competitiveness is improving via innovation and digital policy enhancement.	Comparative	Malaysia/China

Fintech Lending Adoption among Muslim Millennials in Southeast Asia	Safira, N., Inayatillah, R., Meutia, R., Kamri, N. A., & Yusof, K. A.	2025	BANCO: Jurnal Manajemen dan Perbankan Syariah	Islamic fintech enhances consumer trust and financial inclusion in Malaysia and Indonesia.	Empirical	Southeast Asia
Advancing Disability Inclusion Through Social and Digital Entrepreneurship in ASEAN	Widagdo, A., Rahmawati, R., Purnomo, R. A., Jaafar, N. I., & Markhumah, U.	2025	Int. J. of Innovative Research and Scientific Studies	Inclusive digital entrepreneurship fosters empowerment and sustainable development in Malaysia and Indonesia.	Empirical	Malaysia/Indonesia
Trends and Transformations in Financial Behaviour of SMEs in Southeast Asia: A Bibliometric Review	Sunandes, A., Fauzi, M. R., & Makaryanawati, M.	2025	Asian Journal of Applied Business and Management	Maps digital transformation trends, sustainability, and financial literacy of SMEs in SEA.	Bibliometric Review	Southeast Asia
Exploring Growth Pathways: Strategic Approaches for MSMEs to Thrive in Southeast Asia's International Markets	Ramadhan, T. S., Khwarazmita, T., Pratikto, H., & Hermawan, A.	2025	Int. J. of Economics, Business and Innovation Research	Digital competence and market networks drive MSME internationalization and performance.	Empirical	Southeast Asia
Digital Transformation and E-Commerce Adoption: A Comparative Study	Jabbi, E.	2025	JRMSI - Jurnal Riset Manajemen Sains Indonesia	E-commerce adoption fosters consumer engagement and SME growth in developing economies.	Comparative	Indonesia/SEA
Private Brand Development Strategy in the Jakarta Retail Sector	Oktrainal, R. F., & Ariyani, N.	2025	Review: Journal of Multidisciplinary in Social Sciences	Shows how sustainability values and digital marketing strengthen consumer engagement in retail.	Empirical	Indonesia (SEA)
Digital Neighbourhoods and Intelligent Consumer Behaviour in Green Growth Initiatives	Ostonaqulova, G.	2025	Int. J. of Social Science Research and Review	Digital engagement correlates with eco-conscious consumer behavior and sustainable purchasing decisions.	Empirical	SEA Comparative Context
Capacity and Market Potential for Local Production and Distribution of Electric Two-Wheelers in Southeast Asia	Kim, H. J., Shrestha, S., & Pranawengkapti, K.	2025	Sustainable Earth Reviews	Collaborative digital and financial ecosystems accelerate adoption of sustainable mobility in SEA.	Empirical	Thailand, Indonesia, Vietnam
Going Digital for SMEs: Adapting Business Model and Seizing Opportunities to Achieve Sustainable Business Performance	Tai, M. Y.	2023	Int. J. of Academic Research in Business and Social Sciences	Digital business models enhance SME adaptability, sustainability, and competitiveness in Malaysia.	Conceptual	Malaysia

Navigating the Malaysian Dilemma: Constructing a Sustainable Economy in the Post-COVID-19 Era	Annamalah, S., Aravindan, K. L., & Sentosa, I. 2024	Journal of digital transformation Infrastructure, Policy and Development	Examines how Malaysia's digital transformation drives sustainable and inclusive post-pandemic growth.	Empirical/Policy	Malaysia
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4.2. Methodological Quality Assessment

The methodological quality of the empirical studies was assessed using the Mixed Methods Appraisal Tool (MMAT), which evaluates research coherence, data adequacy, analytical rigor and alignment between data and interpretation. Among the 21 included studies, 14 were empirical and were eligible for MMAT appraisal. The empirical subset consisted primarily of quantitative descriptive survey studies ($n = 9$), qualitative interview-based or case study designs ($n = 3$) and mixed methods studies combining qualitative and quantitative evidence ($n = 2$). Consistent with prevailing patterns in digital marketing and sustainability research across Southeast Asian markets, no randomized experimental studies were identified, reflecting the dominance of observational and non-experimental designs in this research domain.

Overall, methodological quality was satisfactory. A majority of the empirical studies ($n = 9$; 64.29%) achieved high-quality scores under MMAT, demonstrating clear methodological alignment, transparent data reporting and appropriate analytical procedures. Four studies (28.57%) were rated as moderate-high due to minor limitations such as constrained sampling strategies, limited methodological validation or insufficient disclosure of analytical techniques. One empirical study (7.14%) was classified as moderate quality due to reduced methodological transparency and incomplete reporting of data collection or analytical procedures. No empirical study was rated as low quality or excluded on the basis of MMAT scoring.

Conceptual and review-based studies were not assessed using MMAT, as MMAT is designed for empirical research designs. Instead, conceptual studies ($n = 5$) and region-focused review or bibliometric studies ($n = 2$) were appraised narratively. Conceptual contributions generally demonstrated theoretical coherence and relevance but varied in depth of theoretical integration and contextual specificity. The bibliometric and review studies exhibited adequate methodological reporting and contributed to mapping research trends, sustainability practices and digital economic development in Southeast Asia. Collectively, the methodological profile indicates that digital marketing and sustainability scholarship in Southeast Asia remains predominantly quantitative and descriptive, with comparatively fewer qualitative and mixed methods studies and limited experimental research designs.

Table 2: MMAT Quality Assessment of Empirical Studies ($n = 11$)

No.	Study (Author, Year)	Study Type	MMAT Category	S1	S2	1	2	3	4	5	Overall Quality Rating	Key Notes / Limitations
1	Leeraphong et al. (2025)	Empirical	Quantitative (non-RCT)	✓	✓	✓	✓	✓	✓	✓	High (5/5)	Strong statistical modelling; sustainability link validated
2	Asanprakit & Kraiwanit (2024)	Empirical	Quantitative (non-RCT)	✓	✓	✓	✓	✓	✓	✓	High (5/5)	Social commerce data robust, cross-sector consistency
3	Abdamia et	Empirical	Quantitative	✓	✓	✓	✓	✓	✓	✓	High (5/5)	Clear econometric

No.	Study (Author, Year)	Study Type	MMAT Category	S1	S2	1	2	3	4	5	Overall Quality Rating	Key Notes / Limitations	
	al. (2025)		(non-RCT)									approach; sampling	transparent
4	Safira et al. (2025)	Empirical	Mixed Methods	✓	✓	✓	✓	✓	✓	✓	High (5/5)	Triangulation validity; strong engagement	enhances fintech
5	Widagdo al. (2025)	et Empirical	Qualitative	✓	✓	✓	✓	✓	✓	✓	High (5/5)	Rich thematic analysis; supports empowerment pathways	
6	Ramadhan al. (2025)	et Empirical	Quantitative (non-RCT)	✓	✓	✓	✓	✓	✓	✓	High (5/5)	MSME growth well justified	modelling
7	Oktrainal & Ariyani (2025)	Empirical	Mixed Methods	✓	✓	✓	✓	✓	✓	✓	High (5/5)	Retail sector clearly demonstrated	CE dynamics
8	Ostonaqulova (2025)	Empirical	Quantitative (non-RCT)	✓	✓	✓	✓	✓	✓	✓	High (5/5)	Eco-consumption linked to CE mechanisms	behaviour
9	Kim et al. (2025)	Empirical	Mixed Methods	✓	✓	✓	✓	✓	✓	✓	High (5/5)	Mobility sustainable patterns	ecosystem; adoption
10	Annamalah al. (2024)	et Empirical	Quantitative (non-RCT)	✓	✓	✓	✓	✓	✓	✓	High (5/5)	Policy-integrated quantitative evidence	
11	Jabbi (2025)	Empirical	Qualitative	✓	✓	✓	✓	✓	–	✓	Moderate–High (4/5)	Comparative design; formal validation reported	less

Table 2 presents the MMAT evaluation outcomes for the 11 empirical studies included in this review. The results indicate that most studies demonstrated high methodological rigor, with most satisfying all screening and core appraisal criteria. Quantitative non-randomized designs constituted the dominant empirical approach, followed by mixed-methods and qualitative studies. Notably, no study was excluded based on methodological weaknesses, and all empirical studies met the minimum screening criteria to be evaluated under MMAT. Conceptual, comparative and review-based studies were assessed narratively rather than through MMAT, consistent with established SLR practice in management and marketing scholarship.

Since 11 studies were empirical and evaluated using MMAT, and 10 studies were conceptual, review, or comparative papers, the narrative assessment criteria were applied to the latter group. For consistency, these were mapped to equivalent quality levels using recognized narrative appraisal standards (clarity, coherence, contribution, and contextual relevance).

Table 2: Summary of Overall Quality Distribution (n = 22)

Quality Level	Count	% of Total	Description
High (5/5)	14	66.67%	Empirical or conceptual studies with strong methodological structure, clear contribution, and coherent findings
Moderate–High (4/5)	5	23.81%	Generally well-designed studies with mild limitations in empirical depth, validation, or scope
Moderate (3/5)	2	9.52%	Conceptual or policy-oriented papers lacking empirical triangulation or methodological transparency
Low ($\leq 2/5$)	0	0%	No included study fell below minimum quality screening criteria

The quality appraisal demonstrated that the methodological strength of the included studies was acceptable to high, with no studies rated as low quality or excluded for failing to meet minimum appraisal thresholds. As shown in Table 2, two-thirds of the included studies (66.67%) achieved a high-quality rating, indicating strong methodological rigor, conceptual coherence, and empirical robustness. A further 23.81% of studies were rated as moderate–high, typically due to minor limitations such as constrained sampling frames, limited analytical depth, or insufficient reporting of methodological validation. Only 9.52% of the studies were classified as moderate in quality, primarily comprising conceptual or policy-focused contributions that provided theoretical insight but lacked empirical triangulation. The absence of low-quality studies suggests that the final sample represents a credible and sufficiently rigorous evidence base suitable for thematic synthesis, interpretation and academic generalization.

4.3. Thematic Findings

4.3.1. Overview of Study Characteristics

The 21 included studies span the period from 2020 to 2025 and reflect a diverse mix of empirical, conceptual, comparative and review-based research designs. Empirical studies primarily employ quantitative non-randomized survey or econometric designs, complemented by mixed methods and qualitative case-based approaches in the areas of fintech, digital entrepreneurship, retail and sustainable mobility (e.g., Safira et al., 2025; Widagdo et al., 2025; Kim et al., 2025). Conceptual and policy-oriented contributions examine the broader dynamics of the digital economy, post-pandemic recovery and sustainable business models in Malaysia and Southeast Asia (e.g., Kunasegaran et al., 2024; Seng et al., 2021; Tai, 2023). Review and bibliometric studies provide regional overviews of digital transformation, SME financial behavior and green management practices in the ASEAN context (Toan et al., 2025; Tran et al., 2022; Sunandes et al., 2025).

Geographically, Malaysia features prominently, both in country-specific analyses (e.g., Ong, 2025; Abdamia et al., 2025; Annamalah et al., 2024) and in cross-country work comparing Malaysia with other ASEAN members or China (Hu, 2024; Leeraphong et al., 2025). Other empirical contexts include Indonesia, Thailand, Vietnam and broader Southeast Asian comparisons, indicating that digital transformation and consumer participation are regionally embedded phenomena rather than isolated national trends. Across these studies, digital marketing adaptation (DMA) is broadly operationalized through constructs such as digital transformation, e-commerce and social commerce adoption, digital competence, digital business model innovation, fintech use and digital

entrepreneurship. Consumer engagement (CE) is reflected in measures of digital participation, platform-based interaction, financial inclusion, trust, co-creation and eco-conscious consumption behaviors. Sustainability and economic development outcomes include SME competitiveness, productivity, financial inclusion, green purchasing behavior, disability inclusion, sustainable mobility and post-pandemic economic resilience.

4.3.2. Theme 1: Digital Marketing Adaptation as a Driver of Digital Competitiveness and Participation

The first theme highlights DMA as an enabling mechanism for digital competitiveness, SME growth and broader participation in the digital economy. Several empirical studies demonstrate that digital transformation and adoption of digital tools are strongly associated with improved firm performance and sustainability indicators. Leeraphong et al. (2025) show that digital adoption and transformation among listed companies in Malaysia, Thailand and Indonesia significantly enhance corporate sustainability performance, indicating that strategic digital investments are directly linked to environmental and economic outcomes. Similarly, Abdamia et al. (2025) find that technological and digital adaptation improve the productivity growth of Malaysian microfinance institutions, reinforcing the notion that digital capabilities enhance institutional efficiency and economic resilience.

At the SME and MSME level, digital competence and business model innovation emerge as critical conditions for internationalization and sustainable performance. Ramadhan et al. (2025) demonstrate that digital competence and market networks are key drivers for MSMEs in Southeast Asia to thrive in international markets, while Tai (2023) argues conceptually that digital business model adaptation enables SMEs in Malaysia to seize new opportunities and sustain competitive performance. Asanprakit and Kraiwanit (2024) provide empirical evidence that the transformation from e-commerce to social commerce deepens consumer involvement and stimulates economic growth in emerging markets. In the transport and mobility sector, Kim et al. (2025) highlight how digital and financial ecosystems support the local production and adoption of electric two-wheelers in Southeast Asia, underscoring the role of digital platforms and financial innovation in scaling sustainable mobility solutions.

Collectively, these studies position DMA not merely as a marketing tool but as a strategic driver of digital participation and competitiveness across multiple sectors, including microfinance, retail, mobility, MSMEs and digital trade. Digital transformation is consistently associated with improved performance metrics, expanded market access and enhanced organizational adaptability, laying the foundation for downstream engagement and sustainability effects.

4.3.3. Theme 2: Consumer Engagement as a Behavioral Mechanism Linking Digital Strategies to Market Outcomes

The second theme emphasizes CE as a behavioral and relational mechanism through which DMA translates into market outcomes and, potentially, sustainability related behaviors. Although not all studies explicitly label CE as a construct, many examine closely related dimensions such as digital participation, trust, interaction, platform usage and co-creation.

In financial and fintech contexts, Safira et al. (2025) demonstrate that Islamic fintech lending among Muslim millennials in Southeast Asia builds consumer trust and supports financial inclusion, showing that engagement with digital financial platforms is strongly associated with perceptions of reliability, convenience and ethical alignment. In the field of social and digital entrepreneurship, Widagdo et al. (2025) illustrate how digital platforms are used to empower persons with disabilities in Malaysia and Indonesia, fostering inclusive engagement and entrepreneurial participation. These forms of engagement extend beyond transactional usage and reflect deeper involvement in digital ecosystems.

Within retail and social commerce, Oktrainal and Ariyani (2025) show that sustainability values are embedded in private brand development strategies in Jakarta's retail sector, combined with digital marketing practices, strengthen consumer engagement with brands. Asanprakit and Kraiwanit (2024) similarly highlight that social commerce formats intensify interaction, participation and relationships between consumers and sellers. Consumer engagement in these contexts is manifested through repeated platform participation, sharing, feedback and co-created content.

At a broader societal and behavioral level, Ostonaqulova (2025) connects digital neighborhood platforms and intelligent consumer behavior with eco-conscious consumption and green growth initiatives, suggesting that digital engagement can influence environmentally responsible decision making. Ong (2025) observes that Malaysia's social marketing efforts need deeper and more sustained forms of engagement to effectively promote sustainability-focused behaviors in a multicultural context. Together, these studies indicate that CE is central to how digital strategies produce behavioral and attitudinal changes, with implications for both market and sustainability outcomes.

4.3.4. Theme 3: Sustainability and Economic Development Pathways

The third theme focuses on the sustainability and economic development outcomes associated with DMA and CE. Across the reviewed studies, sustainability is conceptualized along economic, social and environmental dimensions.

Economically, several studies demonstrate that digital transformation supports productivity, growth and competitiveness. Abdamia et al. (2025) show improvements in productivity for Malaysian microfinance institutions; Ramadhan et al. (2025) link digital competence to MSME internationalization; and Hu (2024) indicates that Malaysia's digital trade competitiveness is enhanced through innovation and digital policy. Annamalah et al. (2024) examine how Malaysia's digital transformation contributes to sustainable and inclusive post-pandemic growth, situating DMA within broader strategies for constructing a sustainable national economy.

Social and inclusion-oriented outcomes are evident in studies on financial inclusion, entrepreneurship and disability empowerment. Safira et al. (2025) associate fintech adoption with increased trust and financial inclusion among Muslim millennials, while Widagdo et al. (2025) describe how social and digital entrepreneurship enable disability inclusion and empowerment in ASEAN. These contributions point to CE as both a mechanism and an outcome, as consumers and citizens engage with digital platforms that expand access to financial and entrepreneurial opportunities.

Environmental dimensions of sustainability are explored through green consumption and sustainable mobility themes. Toan et al. (2025) review SME green management practices in ASEAN and link management decisions to triple bottom line sustainability, while Kim et al. (2025) show that supportive digital and financial ecosystems accelerate the adoption of electric two-wheelers, contributing to greener transport systems. Ostonaqulova (2025) explicitly connects digital engagement in "digital neighborhoods" with eco-conscious consumer behavior and sustainable purchasing patterns.

Across these studies, sustainable economic development (SED) emerges as an outcome of complex interactions between DMA, CE and institutional or policy frameworks, encompassing business performance, social inclusion, environmental responsibility and post-pandemic resilience. However, only a subset of studies explicitly operationalizes all three elements (DMA, CE and SED), indicating a gap for more integrated modeling.

4.3.5. Theme 4: Contextual and Policy Drivers in Southeast Asian Digital Ecosystems

The fourth theme highlights the importance of contextual and policy drivers that shape how DMA and CE contribute to SED in Southeast Asia. Several studies emphasize structural conditions, governance approaches and digital policy frameworks.

Kunasegaran et al. (2024) provide a regional view of how digital economy strategies reshape future employment, innovation and inclusive growth in selected Southeast Asian countries, underscoring the role of digital infrastructure, human capital and regulatory frameworks. Tran et al. (2022) compare ASEAN digital readiness and show that Malaysia and Singapore lead in digital sustainability initiatives, positioning them as regional benchmarks. Seng et al. (2021) discuss post-COVID-19 economic recovery in Southeast Asia and argue that structural reforms and digitalization are essential for sustainable growth and resilience.

At the national level, Zreik (2024) examines digital governance adaptation in Malaysia during COVID-19, highlighting the role of digital tools and governance mechanisms in disaster management and sustainability strategies. Ong (2025) reflects on the state of social marketing in Malaysia and calls for more context sensitive, culturally informed engagement strategies to support sustainability-related behavior change. Tai (2023) outlines conceptual pathways through which SMEs in Malaysia can adapt business models to align with digital opportunities and sustainability-oriented goals. Collectively, these contributions emphasize that the effectiveness of DMA and CE is mediated by policy frameworks, institutional quality, cultural diversity and regional integration.

4.3.6. Bridging the DMA–CE–SED Pathway

Across the four themes, a nested pathway emerges in which digital marketing adaptation enables consumer engagement, which in turn contributes to sustainability and economic development outcomes within specific institutional and policy contexts. DMA, operationalized through digital transformation, social commerce, e-commerce, fintech and digital entrepreneurship, appears consistently associated with enhanced competitiveness, access and performance. CE functions as a mediating mechanism, expressed through trust, participation, interaction, co-creation and eco-conscious behavior in digital environments. Sustainability outcomes range from productivity growth, SME internationalization and financial inclusion to disability empowerment, green consumption and sustainable mobility.

However, only a limited number of studies explicitly model CE as a formal mediator between DMA and SED. Most studies examine dyadic relationships such as DMA → performance, digital adoption → inclusion or engagement → green behavior in isolation. This highlights an important research gap: the need for integrated empirical models that explicitly test the DMA–CE–SED chain within specific sectors and national contexts. Such a gap aligns closely with the theoretical proposition of this review and provides a clear agenda for future work, particularly in Malaysia, where digital transformation, sustainability policies and multicultural consumer markets converge.

5. Discussion

The findings of this review reveal that digital marketing adaptation (DMA) operates as a strategic enabler that enhances organizational competitiveness, digital participation and market performance in Southeast Asia, particularly in Malaysia, Indonesia, Thailand and Vietnam. These outcomes are consistent with the broader digital transformation literature, which suggests that digital capabilities increase efficiency, innovation and market access in developing economies. However, the included studies extend this narrative by demonstrating that DMA supports not only firm-level performance but also broader sustainability and economic development (SED) outcomes, including financial inclusion, SME internationalization, productivity growth, empowerment of marginalized groups and environmentally conscious consumption.

A central contribution of this review is the identification of consumer engagement (CE) as a behavioral mechanism through which digital strategies translate into sustainability-oriented outcomes. Although only a subset of included studies explicitly operationalizes CE as a construct, a wide range of engagement-related behaviors such as participation, trust, interaction, co-creation and platform usage, are found to mediate or shape market and societal outcomes. This supports the assumptions of

the Stimulus–Organism–Response (SOR) framework, where DMA functions as a stimulus, CE reflects internal cognitive and affective organismic responses and sustainability-related behaviors represent response outcomes. Similarly, the logic of value co-creation emphasized in Service Dominant Logic (SDL) is visible in studies that show how consumers contribute knowledge, trust, preferences and participation through digital platforms, thereby creating socio-economic value for firms and communities.

The findings further indicate that sustainability outcomes in the reviewed literature are multi-dimensional. Economic outcomes include enhanced productivity, improved firm competitiveness, scalable business models and participation in international trade. Social outcomes include financial inclusion among Muslim millennials, entrepreneurial empowerment for persons with disabilities, and culturally grounded social marketing interventions that encourage sustainability-oriented behavior change. Environmental outcomes emerge through studies on sustainable consumption, green purchasing behavior and sustainable mobility transitions. These collective outcomes align with Sustainable Development Goal (SDG) 8, which emphasizes decent work, inclusive growth and innovation-led development, suggesting that digital ecosystems can function as enabling infrastructures for sustainable economic development.

An important contextual insight from this review is the role of Southeast Asia's institutional, cultural and policy environment in shaping the effectiveness of DMA and CE. Countries such as Malaysia, Singapore and Indonesia are embedded in diverse multicultural markets, uneven digital infrastructures and varying levels of regulatory maturity, which influence how consumers adopt digital platforms and how firms strategize digital transformation. Post-COVID policy reforms, digital economy roadmaps and government-led digitalization programs have also played significant roles in advancing DMA and supporting digital participation. These contextual dynamics suggest that the DMA–CE–SED relationship cannot be viewed solely through a firm-level marketing lens but must be understood within broader socio-technical systems and national development agendas.

Despite these developments, the academic discourse remains fragmented. Most empirical studies examine dyadic relationships such as DMA → performance or CE → behavior, without modeling the full DMA → CE → SED pathway. Moreover, sustainability outcomes are often inferred rather than measured directly, and CE is frequently described but not operationalized as a formal mediator. Few studies integrate marketing, sustainability and economic development literature streams, indicating a theoretical gap that this review helps surface. The absence of longitudinal and sector-specific studies further limits the ability to evaluate long-term sustainability effects of DMA and CE in developing economies.

By identifying these theoretical and empirical gaps, the review contributes to emerging efforts to position CE as a mediating mechanism linking digital transformation to sustainability and economic growth in Southeast Asia. The findings suggest opportunities for future research to empirically test this tripartite relationship using validated CE constructs, robust sustainability metrics and integrated theoretical models. For Malaysia and neighboring economies, where digitalization and sustainability agendas are simultaneously advancing, addressing these gaps holds both academic and policy relevance.

6. Conclusion

This review examined how digital marketing adaptation (DMA) and consumer engagement (CE) contribute to sustainable economic development (SED) within the Southeast Asian context, with particular emphasis on Malaysia. The findings demonstrate that DMA functions as a strategic driver that enhances digital competitiveness, organizational performance and digital participation, while CE operates as a behavioral mechanism that enables value co-creation, trust, inclusion and sustainability-oriented behaviors. Evidence across the reviewed studies indicates that sustainability outcomes extend beyond firm-level performance to encompass social inclusion, environmental responsibility and

resilience, aligning with Sustainable Development Goal (SDG) 8 relating to decent work and economic growth. These insights suggest that digital ecosystems hold significant potential to advance sustainability agendas in emerging economies and that CE is a critical pathway through which digital strategies may produce broader socio-economic impact.

Despite these contributions, several limitations should be acknowledged. First, the review relied primarily on studies published between 2020 and 2025, which may omit earlier foundational work on digital transformation and sustainability. Second, the included studies vary in methodological rigor and operationalization of key constructs, particularly CE and sustainability, which were often implied rather than formally measured. Third, while the review focused on Southeast Asia, the distribution of studies was uneven, with Malaysia and Indonesia more prominently represented than other ASEAN economies. Finally, most reviewed studies examined dyadic relationships rather than fully specifying the DMA–CE–SED chain, limiting causal inference.

These limitations highlight several directions for future research. Empirical studies are needed to formally model CE as a mediator linking DMA to SED outcomes using validated CE instruments and sustainability metrics. Longitudinal designs would allow researchers to observe long-term digital and sustainability transitions beyond immediate performance outcomes. Cross-country comparative work could further illuminate how cultural, policy and institutional environments shape the effectiveness of digital strategies. Sector-specific studies in manufacturing, agriculture, healthcare, tourism and public services may also enrich understanding of how digital ecosystems scale sustainability beyond commercial markets. Addressing these gaps would advance theoretical integration across marketing, sustainability and economic development domains and support ongoing digital policy and industry initiatives in Malaysia and the wider Southeast Asian region.

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